

Abstract

Young-growth base age invariant site index models were developed for eleven conifer and five hardwood species found in Northern California (redwood, coastal Douglas-fir, grand fir, ponderosa pine, interior Douglas-fir, sugar pine, white fir, red fir, incense-cedar, Jeffrey pine, lodgepole pine, tanoak, black oak, madrone, red alder, and California laurel). In addition, composite site index models were developed for other true oaks and selected groups of interior conifers. Unbiased parameter estimation procedures were employed requiring a simultaneous estimation of all tree reference-heights that appear as independent variables along with global parameters of the site index model. Resulting site index models were compared and evaluated against existing ones, which produced a set of site index models considered to be the most accurate possible with current data availability. Intra-stand species site index correlations are developed, sampling properties of different site tree selection rules are evaluated, and a young-growth site class basis is proposed for different regions of the State.

Key Words: Site index, site productivity, base-age invariance, young-growth site index models, site class systems.

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